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and the coupling to the workpiece or an electromagnetic reaction signal of the workpiece to the impinging signal are dependent on a distance between detector head and workpiece so that this distance is determinable without any contact and a workpiece surface is adapted to be scanned by the detector head without any contact.

51. Sensor device for burr examination as defined in claim 50, wherein the detector head has an active surface, a local coupling to the workpiece taking place via said surface or impinging signals being transmitted locally to workpiece surface areas and reaction signals being received from these areas via said surface.

52. Sensor device for burr examination as defined in claim 50, wherein detector head and workpiece are movable relative to one another parallel to a distance direction.

53. Sensor device for burr examination as defined in claim 50, wherein detector head and workpiece are movable relative to one another transversely to a vertical distance direction.

54. Sensor device for burr examination as defined in claim 50, comprising a positioning device for the positioning and movement of the detector head relative to the workpiece.

55. Sensor device for burr examination as defined in claim 54, wherein the detector head is positionable by the positioning device along linearly independent coordinate directions.

56. Sensor device for burr examination as defined in claim 54, wherein the detector head is rotatable relative to the workpiece.

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57. Sensor device for burr examination as defined in claim 54, wherein a positioning device for a tool for the machining of the workpiece is used as a positioning device for a distance sensor.

58. Sensor device for burr examination as defined in claim 50, wherein the detector head is designed as a probe or arranged in a probe.

59. Sensor device for burr examination as defined in claim 58, wherein the probe is insertable into a bore in the workpiece.

60. Sensor device for burr examination as defined in claim 58, wherein electronic components of the device are arranged entirely or partially in the probe.

61. Sensor device for burr examination as defined in claim 50, wherein a visual range of the distance sensor is adjusted.

62. Sensor device for burr examination as defined in claim 61, wherein a visual range of the distance sensor is adjustable electromagnetically.

63. Sensor device for burr examination as defined in claim 61, wherein the distance sensor is designed and/or screened in such a manner that the electromagnetic coupling between detector head and workpiece is restricted to a specific visual range.

64. Sensor device for burr examination as defined in claim 61, wherein the specific visual range comprises a viewing direction essentially transverse to a longitudinal direction of a distance sensor.

65. Sensor device for burr examination as defined in claim 61, wherein the specific visual range comprises a viewing direction

A1 cont. essentially parallel to a longitudinal direction of a distance sensor.

66. Sensor device for burr examination as defined in claim 50, wherein a preliminary signal processing takes place in a measuring head and an evaluation unit for the burr examination is provided.

67. Sensor device for burr examination as defined in claim 66, wherein an evaluation algorithm compares a measurement signal with a reference curve.

68. Sensor device for burr examination as defined in claim 50, wherein the detector head is provided with contacts so that it is connectable to a device arranged at a distance.

69. Sensor device for burr examination as defined in claim 50, wherein the detector head is designed as a remote unit couplable cordlessly to a device arranged at a distance.

70. Sensor device for burr examination as defined in claim 50, wherein a distance sensor is an inductive sensor, the detector head being coupled inductively to a metallic workpiece with said sensor.

71. Sensor device for burr examination as defined in claim 70, wherein the distance sensor has a metallic outer surface area acted upon with a voltage.

72. Sensor device for burr examination as defined in claim 50, wherein a distance sensor is an optical distance sensor, the detector head acting upon the workpiece with an optical signal and registering a reflection signal with said distance sensor.

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73. Sensor device for burr examination as defined in claim 72, wherein a light signal is coupled in and/or coupled out in a fiber optic manner.

74. Sensor device for burr examination as defined in claim 50, wherein a distance sensor is an ortho-inductive distance sensor, the detector head being coupled inductively to a metallic workpiece and the workpiece being acted upon by the detector head with an optical signal and a reflection signal being registerable by the detector head with said distance sensor.

75. Sensor device for burr examination as defined in claim 50, wherein a distance sensor is a capacitive distance sensor, the detector head being coupled capacitively to the workpiece with said distance sensor.

76. Sensor device for burr examination as defined in claim 50, wherein the distance sensor is a coupled inductive-capacitive distance sensor, an element couplable to the workpiece not only inductively but also capacitively being provided with said distance sensor.

77. Sensor device for burr examination as defined in claim 50, wherein a plurality of distance sensors is provided.

78. Sensor device for burr examination as defined in claim 77, wherein sensor signals of different distance sensors are linked to one another.

79. Sensor device for burr examination as defined in claim 77, wherein a difference signal of distance sensors is evaluated.

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80. Sensor device for burr examination as defined in claim 77, wherein a cumulative signal of distance sensors is evaluated.

81. Sensor device for burr examination as defined in claim 77, wherein distance sensors of the sensor device for burr examination have the same viewing direction.

82. Sensor device for burr examination as defined in claim 77, wherein distance sensors of the sensor device for burr examination have different viewing directions.

83. Sensor device for burr examination as defined in claim 82, wherein distance sensors of the sensor device for burr examination have viewing directions in opposite directions.

84. Sensor device for burr examination as defined in claim 77, wherein the distance sensors are fixed in position relative to one another.

85. Sensor device for burr examination as defined in claim 77, wherein the relative position of the distance sensors of the sensor device for burr examination is adjustable.

86. Sensor device for burr examination as defined in claim 77, wherein distance sensors have the same viewing plane.

87. Sensor device for burr examination as defined in claim 77, wherein distance sensors have offset viewing planes.

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88. Sensor device for burr examination as defined in claim 77, wherein two distance sensors are provided.

89. Sensor device for burr examination as defined in claim 77, wherein three distance sensors are provided.

90. Sensor device for burr examination as defined in claim 50, wherein the sensor device for burr examination is adapted to the workpiece to be examined with respect to configuration of screening and/or viewing direction and/or operating frequency and/or a free zone.

91. Sensor device for burr examination as defined in claim 50, wherein a distance sensor is moved over a workpiece in a controlled and/or regulated manner in order to scan it.

92. Sensor device for burr examination as defined in claim 91, wherein a distance to the workpiece determined by the distance sensor is a controlled
variable.

93. Use of a distance sensor, said sensor operating without any contact and being positionable locally on a workpiece and able to interact with it locally, wherein a distance between workpiece and distance sensor is determinable from the interaction, as burr examination sensor.

94. Use of a distance sensor as defined in claim 93, wherein the distance sensor is coupled to the workpiece electromagnetically.

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95. Use of a distance sensor as defined in claim 93, wherein the distance sensor is coupled to the workpiece capacitively.

96. Use of a distance sensor as defined in claim 93, wherein the distance sensor is coupled to the workpiece inductively.

97. Use of a distance sensor as defined in claim 93, wherein the distance sensor comprises a detector head with a light transmitter and light receiver, wherein the workpiece is adapted to be scanned locally and optically by means of the detector head.

98. Use of a distance sensor as defined in claim 93, wherein a local sensor field is adapted to be formed between the distance sensor and the workpiece, a distance between distance sensor and workpiece being determinable via said field.